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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/080,785	02/22/2002	David J. Leidel	1301-1125	2977

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EXAMINER

JENKINS, DANIEL J

ART UNIT	PAPER NUMBER
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1742

DATE MAILED: 10/21/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

10/080,785

Applicant(s)

LEIDEL ET AL.

Examiner

Daniel J. Jenkins

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-- The MAILING DATE of this communication appears on the cover sheet with the correspond nc addr ss --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 25 March 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-54 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-54 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

## Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

## Attachment(s)

- ☐ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 5,6,7.
- ☐ Interview Summary (PTO-413) Paper No(s) \_\_\_\_\_.
- ☐ Notice of Informal Patent Application (PTO-152)
- ☐ Other:

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1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

3. Claims 1-54 are rejected under 35 U.S.C. 103(a) as being unpatentable over Reese et al. '791 (Reese et al.) in view of Mravic et al. and Goetzel.

Reese et al. disclose the invention substantially as claimed. Reese et al. disclose a shaped charged liner formed by the method comprising:

providing a high density constituent of tungsten (col. 2, line 51);

providing a low density constituent (col. 2, lines 50-52);

mixing the high and low density constituents to form a mixture (col. 2, lines 53-55); and

forming the mixture into a shaped charge liner.

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Reese et al. further disclose wherein the low density constituent comprises lead, bismuth, tin, zinc, silver, antimony, cobalt, nickel and uranium (col. 2, lines 55-58).

Reese et al. further disclose wherein the tungsten constituent is present from 80% (col. 2, lines 48-51).

Reese et al. further disclose wherein the mixture comprises graphite (col. 2, lines 53-55).

Reese et al. further discloses wherein the liner is used with a housing and explosive charge (col. 1, 23-47).

However, Reese et al. does not disclose wherein the amount of the high density constituent is present from about 50-90%.

Mravic et al. teaches to add the high density constituent from 50-90% in the same field of endeavor for the purpose of adjusting the ballistic performance of the projectile.

It would have been obvious to one of ordinary skill in the art at the time of the invention to adjust the high density constituent of Reese et al. between 50-90% as taught by Mravic et al. in order to adjust the ballistic performance of the liner.

Mravic et al. further discloses wherein copper is a low density constituent additive. It would have been obvious to add copper as taught by Mravic et al. as a low density constituent and in an amount desirable to adjust the ballistic performance of the liner.

However, Reese et al. in view of Mravic et al. do not disclose adding oil to the mixture.

Goetzel teaches that oil is an equivalent to graphite in the same field of endeavor for the purpose of adding lubricant to the mixture. It would have been obvious to one having

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ordinary skill in the art at the time of the invention to add oil in place of graphite in the invention of Reese et al. as taught by Goetzel in order to provide lubrication.

However, Reese et al. in view of Mravic et al. do not disclose further disclose substituting molybdenum to the mixture. It is common knowledge in the prior art to substitute molybdenum for cobalt or nickel in the same field of endeavor, since the substitution is known in the art.

However, Reese et al. in view of Mravic et al. do not disclose substituting lead for tungsten.

Reese et al. discloses tungsten and lead as equivalents, but selects tungsten in his invention for applications wherein lead is not a desirable contaminant.


It would have been obvious to one having ordinary skill in the art at the time of the invention to partially substitute lead for tungsten in applications where environmental concerns over lead use are not as important as the cost savings realized by the relative less cost of lead over tungsten.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Daniel J. Jenkins whose telephone number is 703-306-4157. The examiner can normally be reached on M-TH6:30AM-5:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Roy King can be reached on 703-308-1146. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

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Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0661.



Daniel J. Jenkins  
Primary Examiner  
Art Unit 1742

dj  
September 28, 2003